

requires substantially less force to be pulled than a light cultivation device (Specification, page 2, lines 18-22).

As an initial matter, the Patent Office must consider the advantages of a claimed device, even though they are not recited in the claims, where these advantages are due to the structure recited in the claims. See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (A compound and all of its properties are inseparable). In this case, the frame can be made less rigid and therefore lighter than a conventional plough frame *because its drawbar is attached centrally rather than to the side of the device*. This is possible because the appropriate mouldboards, i.e. one of the series of two, can be used by rotating the attachments shaft and they can be used at appropriate distances from each other¹ by adjusting the angle of the device in relation to the driving direction. In short, the claimed device requires substantially less force to be pulled than a conventional plough.

Moreover, one of ordinary skill in the art would understand the advantage of the claimed device ("requiring substantially less

¹It is important the individual mouldboards are at optimal distances from each other with respect to the driving direction and the direction transversal to the driving direction in order to achieve optimal soil cultivation using minimum force.

force to be pulled") to mean, at a minimum, the claimed device does not require as much force to be pulled by a vehicle during operation as a cultivation device which is attached at one side to a pulling vehicle. A side attachment location requires a very rigid structure, which means it is heavy (Specification, page 2, lines 3-6). A heavy, rigid device requires more pulling force than the claimed device, which does not have to be as rigid or heavy due to the central mounting location of its adjustable angle drawbar.

The cited combination of references fails to raise a prima facie case of obviousness because (1) the references have been improperly combined and (2) one of ordinary skill has no motivation or apparent reason to combine Lochmiller and Coste to arrive at the claimed cultivation device. Lochmiller's device lacks a drawbar, and there is no suggestion or motivation to attach the Lochmiller device to an adjustable angle drawbar.

It is improper to combine references where the references teach away from their combination. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). In this case, Coste's teaching that "right hand" and "left hand" mouldboards are undesirable due to increased numbers of parts, increased plow weight and price, and reduced tractor performance (Col. 1, lines

13-17) teaches away from the claimed combination, which includes such "right hand" and "left hand" mouldboards.

The improper combination of Lochmiller and Coste would not motivate one of ordinary skill in the art to use an adjustable angle drawbar to attach the Lochmiller plough to a tractor for several reasons. First, the Lochmiller plough has ripper ploughs (48) ahead of its mouldboard ploughs (54) and dam generators (86) behind its mouldboard ploughs. In order to obtain the desired result (the positioning of the furrows and dams, etc. - see Figs. 1 to Fig. 5), the Lochmiller plough must be pulled in exactly the longitudinal direction of the plough. Second, at least according to the figures, e.g. Fig. 6, the Lochmiller plough has tires that are firmly mounted which cannot be turned and accordingly the plough can only be pulled in one direction.

Reconsideration and withdrawal of the obviousness rejection of claims 17, 20-25 and 27-31 over Lochmiller in view of Coste are earnestly requested.

The 35 U.S.C. § 103(a) rejection of claim 26 over Lochmiller in view of Coste, further in view of U.S. Patent No. 3,985,187 to Callahan, is traversed. The claimed device includes an adjustable angle drawbar and a rotatable attachment shaft for mouldboards. As

discussed above, the adjustable angle drawbar is substantially in parallel with the driving direction during cultivation, while the longitudinal axis of the frame of the device is substantially transverse to the driving direction. The claimed combination requires substantially less force to be pulled than a light cultivation device.

The cited combination of references fails to raise a prima facie case of obviousness. The deficiencies of Lochmiller and Coste, discussed above, are not remedied by the additional disclosure of Callahan. More specifically, Callahan fails to disclose or suggest a cultivation device which includes an adjustable angle drawbar and a rotatable attachment shaft for mouldboards. Instead, Callahan is cited to show attachment of a mouldboard to the mouldboard attachment shaft by a shear pin. Reconsideration and withdrawal of the obviousness rejection of claim 26 over Lochmiller in view of Coste, further in view of Callahan, are respectfully requested.

The 35 U.S.C. § 103(a) rejection of claims 18 and 19 over Lochmiller in view of Coste, further in view of the knowledge of one of ordinary skill in the art, is traversed. The claimed device

includes an adjustable angle drawbar and a rotatable attachment shaft for mouldboards.

This rejection is traversed for the same reasons discussed above regarding the obviousness rejection of claims 17, 20-25 and 27-31 over Lochmiller in view of Coste: the references have been improperly combined and their improper combination would not lead one of ordinary skill in the art to use an adjustable angle drawbar to attach the Lochmiller plough to a tractor. Reconsideration and withdrawal of the obviousness rejection of claims 18 and 19 are respectfully requested.

It is believed this application is in condition for allowance. Reconsideration and withdrawal of all rejections of claims 17-36, and issuance of a Notice of Allowance directed to those claims, are earnestly requested. The Examiner is urged to telephone the undersigned should he believe any further action is required for allowance.

The fee for a one month Extension of Time is being paid electronically today. It is not believed any additional fee is required for entry and consideration of this Request.

U.S. Appln. S.N. 10/561,391
REQUEST FOR RECONSIDERATION

PATENT

Nevertheless, the Commissioner is requested to charge Deposit
Account No. 50-1258 in the amount of any such required fee.

Respectfully submitted,

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Enclosure:
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